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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,453	12/14/2005	Michael Cornelis Van Beek	PHNL030694US	3081

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EXAMINER	
FERNANDEZ, KATHERINE L	
ART UNIT	**PAPER NUMBER**
3768	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/560,453	VAN BEEK, MICHAEL CORNELIS	
	Examiner	Art Unit	
	Katherine L. Fernandez	3768	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 December 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 December 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/14/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The Information Disclosure Statement filed on December 14, 2005 is acknowledged. The Information Disclosure Statement meets the requirements of 37 C.F.R. 1.97 and 1.98 and therefore the references therein have been considered.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-2 and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scheruebl et al. (US Patent No. 6,674,572) in view of Worster et al. (US Patent No. 5,963,314).

Scheruebl disclose an analysis apparatus and method for analyzing an object (O) comprising: an excitation system (1) for emitting an excitation beam to excite a target region; a monitoring system comprising an imaging system (10) to image the target region; a detection system (9a,10) for detecting scattered radiation from the target region generated by the excitation beam; focusing means for focusing the excitation system, the monitoring system and the detection system on a detection plane in the target region (7); image processing means (14) for determining image characteristics,

which indicate if the imaging system is focused on the object to be analyzed, from a detected image (column 5, lines 19-33), and auto-focusing means (column 3, line 36 through column 5, line 6) for controlling the focusing means to change the focusing of the monitoring system, the excitation system and the detection system based on the determined image characteristics, for controlling the monitoring system to image the target region and for controlling the image processing means to determine the image characteristics from a detected image until the object substantially lies in the detection plane (See Figure 1). The excitation system can comprise of a light beam generation means for emitting a light beam, in particular a laser for emitting a laser beam, to be focused on the target point of the object (column 2, line 66 through column 3, line 5). Regarding claim 2, Scheruebl further disclose that the image processing means are adapted for determining the amplitudes of spatial frequencies corresponding to typical characteristics of the object from a detected image and wherein said auto-focusing means are adapted for controlling the focusing means to change the focusing of the monitoring system, the excitation system and the detection system based on the determined image characteristics, for controlling the monitoring system to repeatedly image the target region and for controlling the image processing means to determine the image characteristics from a detected image until the determined amplitudes of spatial frequencies are maximal (column 3, line 36 through column 4, line 56).

However, Scheruebl do not specifically disclose that the monitoring system further comprises of a monitoring beam source for emitting a monitoring beam. Worster et al. disclose a laser imaging system (column 1, lines 22-24). They disclose that they

obtain a conventional microscope image by using a conventional microscope illuminator (220) (i.e. monitoring beam source) and video camera (219). With regards to claim 10, as can be seen from Figure 2, the monitoring system can be adapted for orthogonal polarized spectral imaging (Figure 2). At the time of the invention, it would have been obvious to one of ordinary skill in the art to have the monitoring system further comprise a monitoring beam source for emitting a monitoring beam. The motivation for doing so would have been to perform white light imaging and obtain a while light image, as taught by Worster et al. (column 10, lines 3-9, lines 19-24).

5. Claims 3 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scheruebl in view of Worster et al. as applied to claims 1-2, and further in view of Black et al. (US Patent No. 6,766,187).

Scheruebl in view of Worster et al. do not specifically disclose that the analysis apparatus is adapted for in vivo analysis of blood and wherein the image processing means are adapted for determining the amplitudes of spatial frequencies corresponding to typical diameters of blood vessels from a detected image. Scheruebl also do not specifically disclose that the system is adapted for use in the field of laser surgery, laser cutting, laser welding, laser shaving, photodynamic therapy, radio therapy, remote sensing and target and tracking. Black et al. disclose a laser treatment of biological tissues and structures including blood vessels, and a method of detecting onset of coagulation in the blood vessels (column 1, lines 7-10). Their system includes delivering a treatment light and a monitoring light to a region of tissue including a blood vessel in order to detect the onset of coagulation (column 5, lines 4-42). The onset of

coagulation of blood in the blood vessel is determined from the monitored remitted wavelength radiation (column 7, lines 47-60). At the time of the invention, it would have been obvious to one of ordinary skill in the art to have adapted the system of Scheruebl in view of Worster et al. for in vivo analysis of blood and adapt the image processing means for determining the amplitudes of spatial frequencies corresponding to typical diameters of blood vessels from a detected image, and to adapt the system for use in the field of laser surgery, laser cutting, laser welding, laser shaving, photodynamic therapy, radio therapy, remote sensing, and target and tracking. The motivation for doing so would have been to provide further information, such as information on blood, that can make procedures, such as laser treatment of dermatological conditions, more effective, as taught by Black et al. (column 1, lines 13-54).

6. Claims 4 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scheruebl in view of Worster et al. as applied to claims 1-2, and further in view of Kobayashi (US Patent No. 6,094,223).

Scheruebl in view of Worster et al. do not specifically disclose that the image processing means are adapted for determining the maximum contrast present in a detected image and/or at one or more image portions corresponding to the object or object portions and wherein said auto-focusing means are adapted for controlling the focusing means to change the focusing of the monitoring system, the excitation system and the detection system based on the determined image characteristics, for controlling the monitoring system to repeatedly image the target region and for controlling the image processing means to determine the image characteristics from a detected image

until the determined contrast is maximal, the intensity of one or more pixels in the detected image show an extremum, the spread in intensity of pixels in the detected image is maximal, the average intensity difference between neighboring pixels in the detected image is maximal, or the absolute intensity difference between neightboring pixels in the detected image is maximal . Kobayashi discloses an automatic focus sensing device that automatically senses an in-focus point by driving an imaging lens (column 1, lines 6-8). They disclose auto-focusing methods that determine the in-focus position to be the position that offers the maximum-contrast (column 1, lines 10-21). Their method includes imaging an object, calculating the contrast values of areas in the image, and determining the in-focus position as the maximum contrast position (column 9, lines 4-42). The imaging lens is controlled to the lens position giving the maximum contrast value (column 9, lines 38-42). At the time of the invention, it would have been obvious to one of ordinary skill in the art to have the image processing means adapted for determining the maximum contrast present in a detected image and have the auto-focusing means are adapted for controlling the focusing means to change the focusing of the systems based on the determined image characteristics, for controlling the monitoring system to repeatedly image the target region and for controlling the image processing means to determine the image characteristics from a detected image until the determined contrast is maximum, the intensity of one or more pixels in the detected image show an extremum, the spread in intensity of pixels in the detected image is maximal, the average intensity difference between neighboring pixels in the detected image is maximal, or the absolute intensity difference between neighboring pixels in the

detected image is maximal. The motivation for doing so would have been that the position that offers the maximum-contrast is the in-focus position, as taught by Kobayashi (column 1, lines 10-21).

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scheruebl in view of Worster et al. and Kobayashi as applied to claim 4, and further in view of Black et al.

The combined references of Scheruebl in view of Worster et al. and Kobayashi do not specifically disclose that the analysis apparatus is adapted for in vivo analysis of blood and wherein said image processing means are adapted for determining the maximum contrast present in a detected image between blood and surrounding tissue, in particular at the edges of blood vessels. Black et al. disclose a laser treatment of biological tissues and structures including blood vessels, and a method of detecting onset of coagulation in the blood vessels (column 1, lines 7-10). Their system includes delivering a treatment light and a monitoring light to a region of tissue including a blood vessel in order to detect the onset of coagulation (column 5, lines 4-42). The onset of coagulation of blood in the blood vessel is determined from the monitored remitted wavelength radiation (column 7, lines 47-60). At the time of the invention, it would have been obvious to one of ordinary skill in the art to have adapted the system of Scheruebl in view of Worster et al. and Kobayashi for in vivo analysis of blood and adapt the image processing means for determining the maximum contrast present in a detected image between blood and surrounding tissue. The motivation for doing so would have been to provide information of blood that can make medical procedures, such as laser treatment

of dermatological conditions, more effective, as taught by Black et al. (column 1, lines 13-54).

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine L. Fernandez whose telephone number is (571)272-1957. The examiner can normally be reached on 8:30-5, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eleni M. Mantis-Mercader can be reached on (571)272-4740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ELENI MANTIS MERCADER
SUPERVISORY PATENT EXAMINER